Memorandum

To: File

From: John D. Jenks, Environmental Engineer

Through: Rusty Ruby

Date: 1/13/2005

Re: Response to Comments received on Summit Vineyard LLC Project (N3031-001)

Beginning on October 25, 2004, a public comment period was held to solicit comments regarding Summit Vineyard's Lake Side Power Plant, a 560-MW, natural gas-fired, turbine project located in the town of Vineyard, Utah. The Division of Air Quality received three written comment letters, which included several individual comments. These comments are each addressed below.

1. I am opposed to a new electrical generation facility in Utah Valley. As you know, the air pollution here in Utah Valley is already terrible in the winter - even with Geneva Steel having been shut down for the past few years. I do realize that, as a user of electricity, it is somewhat unfair for me to take a "not in my backyard" stance on the issue. However, I understand that Utah already produces substantially more electric power than it uses. We as Utahns are already are bearing more than our "share" of the negative side effects that come from our demands for electric power. Even if another power plant was desperately needed to supply local residents, a more suitable location could easily be found. It just doesn't make sense to place the plant in the center of a major population base already struggling with air quality problems. Please understand that I am not a typical "environmentalist" - I am generally in favor of activities such as logging, mining, off-road vehicles, oil exploration, etc. On this particular issue, however, I feel strongly that it is not in Utah Valley's best interest to allow this power generation plant. I encourage your office to reject the proposal to build the plant.

UDAQ response:

The comment raises the question of an alternative sites analysis, which is required under the Major New Source Review requirements for locating a new major source within a non-attainment area. It also hints at the inclusion of existing sources within such an analysis.

The alternative sites analysis has been included as part of the New Source Plan Review (NSPR). It states, in part, that there are a limited number of locations in which a new power generation project can be located. The Salt Lake Valley, which this source would serve, is line-limited, meaning that transmission capability is a major deciding factor in project location. There is also the question of water and fuel supply availability.

At the time of this response to comments, only five total locations were identified as having some or all of the project requirements. Most of those required locating the source at a site adjacent to another existing power generation facility. These were rejected primarily because they were located too close to these other existing projects. The modeling becomes more complex the closer that two major sources are to each other. The three locations not locating next to an existing power generation facility were all located in an area of moderate non-attainment for PM10 – specifically Salt Lake and

Utah Counties. The question of alternative site analysis would apply in all three cases, and given that each area is the same severity of non-attainment, the decision is then one of other resources. The Vineyard location was chosen as preferable to the others given its proximity to fuel and water sources, the availability of land, the availability of emission offset credits, and the line capacity of the nearby substation.

The remaining point, that of including existing sources in an analysis, is addressed in the modeling memorandum. As a Prevention of Significant Deterioration (PSD) source, Summit Vineyard is required to include existing sources in their modeling analysis. Summit Vineyard performed this analysis which was reviewed and approved by the Technical Analysis Section of UDAQ, on August 27, 2004.

2. COMMENT Section I.7 of the Engineering Review (ER) states (in part), "The SCR process will use aqueous ammonia. Ammonia slip, or the concentration of unreacted ammonia in the exiting exhaust gas, will be limited to less than 10 ppm". Section III.4.3 states (in part), "The proposed BACT emission limit for ammonia slip from the SCR operation is 10 ppmvd averaged over 3 hours."

   A. There is no limit on ammonia slip in the ITA.

   B. New York State, in a recent permit action, on pg 5-13 states "To meet NYSDEC guidelines for ammonia (NH3) slip, combined-cycle stack emissions of NH3 will be limited to 5 ppm by controlling the NH3 injection rate"

   C. In the same permit action, NY states on pg 5-50, "The use of urea pellets eliminates the potential hazard of on-site ammonia storage.

   D. The ER does not quantify ammonia emissions in lbs per hour or tons per year, as other emissions are in Section II.

   This ITA should: A) contain limits for ammonia slip; B) the basis for those limits should be discussed in the ER; C) the ER should discuss, why liquid ammonia, with its greater risks during transport and storage as compared with urea pellets, is permitted; and D) the predicted emissions of ammonia should be quantified for public review.

UDAQ response:

Ammonia is used to reduce emissions of oxides of nitrogen (NO_x) by combining with NO_x in the presence of a catalyst at the elevated temperatures found in the exhaust gas stack coming from both the combustion turbines (CTs) and heat recovery steam generators (HRSGs). The commenter has a number of questions relating to the amount of ammonia 'slip', the un-reacted ammonia that passes through the catalyst bed and is released to the atmosphere.

At this time UDAQ has no authority to regulate ammonia emissions under the PSD regulations. UDAQ agrees that the predicted emissions of ammonia should be quantified and that estimate should be included in the NSPR. The amount of ammonia slip for this project is estimated to be less than 10 ppm. The use of ammonia in any form is included as part of the BACT review for the source, and is included in the NSPR. However, UDAQ does not have any authority to regulate which form that ammonia must be stored, transported, or injected. The source chose to use liquid ammonia for ease of storage and for reasons of cost. In fact, the ammonia storage system is only included in the Intent to Approve (ITA) for informational purposes. It will continue to be listed as such in the final Approval Order.

The listing in sections I.7 and III.4.3 of the NSPR mentions BACT for ammonia slip. This is an unfortunate case of re-listing the information found within the Notice of Intent. This memo serves as clarification of those two sections of the NSPR.

3. In the April 18, 2002 letter from Utah DAQ to EPA Region 8, regarding the PM10 SIP revision, Utah agreed to work "in good faith to develop approvable SIP revisions, which address the following issues... (5) Enforceable emission limits for the SIP or maintenance plan, including enforceable 24-hour emission limits for major sources..." The current ITA has 24 hour limits for NOx and CO; it must also have a 24 hour limit for PM10.

UDAQ response:

It appears that the commenter is specifically referring to the 24-hour limits for NO_x and CO that were included in condition #9 of the ITA. The ITA also specifies a limit for PM_{10} in the previous paragraph of condition #9. The limit for PM_{10} of 10.8 lb/hour is more stringent than a 24-hour limitation. The paragraph of daily values for NO_x and CO was included as part of the startup/shutdown limitations for the source. As the relative amount of PM_{10} emissions does not vary during startup or shutdown operating conditions with the same magnitude as NO_x and CO, UDAQ does not feel an additional 24-hour PM_{10} emission limitation is warranted.

4. On June 14, 2004, Region 9 issued a construction permit for a project very similar to the Utah Summit proposal; Moapa Paiute Energy Center Project. Moapa has 3 turbines, while Summit has 2, but otherwise the projects are similar. The Moapa project NOx limit is 2 ppm on a 1 hour average, vs the ITA's proposed limit of 2 ppm on a 3 hour average. Moapa is located in an attainment area, while Summit is located in a non-attainment area and is subject to LAER for NOx.

UDAQ response:

This comment is extremely similar to one made by another commenter. This second comment is listed below as #10. This second comment also includes additional examples of emission limitations found throughout the country. Please see UDAQ's response to comment #10.

5. TABLE III-2 – BACT SUMMARY states that for the turbines, BACT for VOCs is 2 ppm, 3 hour average, but the ITA contains no limit on VOCs. Summit's PTE for VOCs is listed as 72 tpy, almost double the PSD significance threshold.

   The previously referenced NY permitting action on pg 5-18 states, "oxidation catalyst will be used to control VOC emissions to 1.2 ppm." The ITA should A., provide emission limits for VOCs, and B., the ER should discuss how the BACT emission rate for VOCs from the combustion turbines was determined.

UDAQ response:

This comment is extremely similar to one made by another commenter. This second comment is listed below as #11. Please see UDAQ's response to comment #11.

6. Condition 9 contains no emission limits for the Auxiliary boiler, nor any initial compliance test. Moapa has PM10, NOx and CO emission limits on the auxiliary boiler, as well as VOC limits on both the turbines and the auxiliary boiler. Utah's permit in a non-attainment area should be no less stringent than Moapa.

UDAQ response:

A second commenter also mentioned the lack of emission limitations for the auxiliary boiler. UDAQ agrees that the auxiliary boiler needs emission limitations. The AO will include the following as part of condition #9:

Pollutant	Auxiliary Boiler
NOx (LAER)	0.017 lb/MMBTU
CO (BACT)	0.037 lb/MMBTU
PM10 (LAER)	0.01 lb/MMBTU

These limitations would all have a 3-hour averaging period. These emission limits will be met using low-NO_x combustion technology and good combustion practices. Assuming continuous operation, the annual emissions will be well below significant levels. However, it is unlikely that the auxiliary boiler will operate continuously. This source will only operate when the combustion turbines are not operating or are in startup or shutdown mode. Dispersion modeling addressed both continuous auxiliary boiler operation and auxiliary boiler operation during combustion turbine startup and shutdown events. The modeling showed that these impacts would be below significant impact levels.

UDAQ reviewed the Moapa permit mentioned by the commenter. While emission values were included, UDAQ found it impossible to make a direct comparison of these values with those listed above. The Moapa permit contained no restrictions on boiler size, type or manufacturer. Additionally, a later condition of the Moapa permit lists the specific New Source Performance Standards that apply to the source. As none of the NSPS (40 CFR 60) subparts D through Dc were listed, UDAQ must assume that this boiler is of a much smaller size than the Dc auxiliary boiler being used at the Summit Vineyard location. While a technical support document is available through EPA region IX, when UDAQ contacted region IX we learned that the document is not enforceable, and cannot therefore be used for regulatory comparison purposes. It is interesting to note that this support document includes a 130 MMBtu/hr auxiliary boiler, which is not only much larger than Summit Vineyard's auxiliary boiler, but also well within the size needed to qualify under NSPS subpart Db.

7. EPA policy is that BACT/LAER emission limits must apply at all times. The Moapa permit contains limits for startup and shutdown emissions for the turbines, monitored by CEMs. Utah's ITA proposes to abandon all emission limits during startup and shutdown, and the emission rates used to model startup & shutdown emissions are unverified by testing at this site.

   The ITA should contain emission limits for startup and shutdown. Modeling should be done at the rates in the limits, and if testing determines that those rates are unrealistic, the air impact analysis should be redone and new limits set that protect the NAAQS.

UDAQ response:

The commenter is referring to condition #9 of the ITA, which mentions, in only the first paragraph of that condition, that the emission limitations only apply during steady state operations. There is an additional paragraph of that condition, which applies during startup and shutdown operation. There is also an additional condition (condition #11), which covers short-term exclusions that are specifically related to rapid load changes on the combustion turbines. Together conditions #9 and 11 cover all periods of operation of the CT/HRSG units.

In regard to the second half of the above comment, which mentions that modeling should be performed at rates verified by testing, the source did perform modeling. The source performed dispersion modeling for a large variety of different loads, operating conditions, and including startup

and shutdown emissions. A specific emission limitation value would not represent maximum possible impact from this source.

A period of startup or shutdown is not a simple linear scaling of emissions. Combustion turbines have a variable emission profile, which is different for each type of startup and for shutdowns. An instantaneous emission limitation might only be applicable for an extremely short period of time. There is also the added complication of both the SCR and oxidation catalyst beds. These two control devices only function properly when they have reached a stable temperature. Attempting to use these to control emissions before this temperature is reached can foul, poison or otherwise damage the catalyst beds. Emission limitations are typically imposed as a representation of the effectiveness of the chosen control technology as being the best available (BACT). BACT for the CT/HRSG units during startup and shutdown operations are good combustion practices, and limiting both the number and duration of these events (see condition #12 of the ITA).

A better measure of the impact this CT/HRSG source has during startup and shutdown conditions is to sum all the startup and shutdown emissions during the averaging period specifically relating to that pollutant. For CO, this averaging period would be the 8-hour CO NAAQS standard (see UDAQ's response to comment #12). For NO_x, a defined precursor of PM_{10} in this airshed, this period would be that of the 24-hour PM_{10} NAAQS standard.

Finally, the highest impact modeled by this source was during a series of startup and shutdown operations, with a load during the remaining short steady state operation period of only 60% of maximum. Compliance testing is typically performed at 90% or higher of maximum load. And while this source has a continuous emissions monitoring system for NO_x and CO, attempting to show compliance with the odd maximum impact scenario described above would be unnecessarily complex and burdensome on the source and on regulators.

A second commenter brings up the issue of specific emission limitations during startup and shutdown operations separately from the short-term exclusions. These additional comments are listed below as #12 and #13. Please see UDAQ's response to these two conditions for further information.

8. The NSPR should discuss emission offsets, and offsets should be required in the final Approval Order

UDAQ response:

The Division agrees with this determination. While condition #14 of the ITA does limit total annual emissions of PM_{10}, NO_x and SO_2 for the purposes of offsets, there is little explanation within the NSRP discussing this. Under R307-403-4(2) emission offsets must be enforceable by the time of construction. Construction is only authorized by the final Approval Order (AO) document, not the ITA or the NSPR. The AO will contain a reference to the exact amount of emission offsets required, and in what ratio. These values are:

PM_{10}	114.96 tons of emission offsets
NO_x	165.96 tons of emission offsets
SO_2	31.8 tons of emission offsets

The source has already obtained these emission offset credits in the amounts specified above, and a letter demonstrating this fact has been placed in the source file.

Condition #14 will remain in the final AO, unchanged, as its purpose is to limit the source's total annual emissions. R307-403-5 specifies that emission offsets are required for the combination of total PM_{10}, NO_x and SO_2. This condition is in place to ensure that no further offsets are required.

The initial ratio of offsets required is set at the time of issuance of the AO, which is based on the emission limitations found in condition #9, and in the estimates of total emissions for the entire plant.

9. No explanation why emission offsets required for this project will provide a positive net air quality benefit.

UDAQ response:

Summit Vineyard has obtained emission offset credits from those originally created by banking the emissions from the now closed Geneva Steel site. In this particular case, the emission offsets are from a location very close to the proposed plant site. Summit Vineyard has proposed to build on property purchased from Geneva Steel. This property is adjacent to the former steel mill. The emission offsets obtained from the former steel mill are from emission points somewhat similar in height, stack gas temperature, and flow rates. The proposed emissions from Summit Vineyard are also being offset under a 1.2 to 1 ratio, and on a pollutant-by-pollutant basis. The offset ratio and the proximity of the offset credits to the proposed location ensure that a positive net air quality benefit is achieved.

10. The proposed LAER emission limit of 2.0 ppmdv for NOx at the combustion turbines should be on a one-hour average rather than a three-hour average.

UDAQ response:

This is a continuation of a previous comment (#4 above). The comment listed above goes on to reference the EPA's national combustion turbine project spreadsheet. The Division and Summit Vineyard reviewed this spreadsheet in conjunction with the Moapa permit (also mentioned in comment #4).

EPA Region IX determined BACT was a NO_x limit of 2.0 ppm over a 1-hour averaging period for the Maopa Paiute Energy Project in Clark County, Nevada. This facility is not in operation at this time therefore the practicality of this limit has not been determined. Also, because the area was in attainment during the permit review and issuance, no offsets for NO_x were required. After the permit issuance this area was determined to be non-attainment for the 8-hour ozone NAAQS standard. This is also the only plant in the country using the same make and model combustion turbines with a 2.0 ppm NO_x limit over a 1-hour averaging period. As this limit has never been demonstrated in practice, assuming that it is achievable would expose the source to increased risk of compliance problems. It would also be a misinterpretation of the definition of LAER, which is Lowest Achievable Emission Rate [emphasis added].

The following table presents the nationwide combined-cycle power plants from EPA Region 4's database (updated 7/20/04) that have been permitted at 2.0 ppm NO_x with an averaging period of 1-hour.

Plant	Total MW	Number of CTs	Engine Model
Towantic Energy Project	540	2	GE 7241
Fore River Station, Weymouth	755	2	Mitsubishi 501G
ANP Bellingham	580	2	ABB GT-24
ANP Blackstone	580	2	ABB GT-24
Sithe Mystic Development	1,550	4	Mitsubishi 501G
Cabot Power	350	1	SW 501G
Athens Generating Co.	1,080	3	SW 501G
Sithe Energy Heritage	800	2	GE 107H

Station			

All of these plants are based on classes of combustion turbines that are different than those proposed for Summit Vineyard. None of these facilities are proposing to use the SW 501F combustion turbine technology. The Mitsubishi 501G, SW 501G, and GE 107H are larger engines. The GE 7241, GE 107H, ABB GT-24, and Mitsubishi 501G engines are developed by manufacturers other than Siemens Westinghouse. While similar in size to the SW501F turbines, the ABB GT-24 engines are no longer available; having been removed from the market because of maintenance and emission problems.

The Sithe Energy Heritage Station and Cabot Power have not commenced operation.

The remaining facilities are located in areas that are non-attainment for the 1-hour ozone NAAQS standard. That these Projects are in ozone non-attainment areas provides additional justification for establishing a 1-hour averaging period for these facilities.

In addition, Summit Vineyard Lake Side Power Plant (LSPP) will be operating at a higher altitude (approximately 4500 feet above Mean Sea Level) than the combustion turbines listed in the above table. Combustion turbine performance may be sensitive to differences in altitude. Therefore, it would be difficult to compare the performance of turbines that are located in different altitudes.

A 2.0 ppm NO_x limit for each combustion turbine at LSPP over a 3-hour averaging period is the lowest of the BACT/LAER determinations found for SW 501F turbines within the spreadsheet. A 1-hour averaging period has not been demonstrated in practice for the Siemens Westinghouse 501F combustion turbines.

As a final note, while NO_x has been defined as a precursor to PM_{10} emissions, Summit is offsetting the NO_x emissions from the LSPP (see comments #8 and 9 above). The PM_{10} NAAQS is on a 24-hour averaging period, while the NO_x NAAQS is an annual average. A 3-hour averaging period is protective of these standards.

11. BACT emission limit should be established for the combustion turbines for volatile organic compounds.

UDAQ response:

This is a continuation of a previous comment (#5 above). The comment continues with a discussion of BACT requirements under 40 CFR 51.116(j)(2). It also requests that a stack test, or other verification of compliance method, be included as well.

UDAQ disagrees with this comment. The projected annual emission totals of volatile organic compounds (VOCs) for the entire plant (including the CT/HRSG units, auxiliary boiler, and other minor emission points) are estimated to be only 72.8 tons per year, below the major source threshold of 100 tons per year (the area is attainment for ozone, of which VOC is a defined precursor). Federal BACT requirements, as listed in 40 CFR 51.116(j)(2), only apply to major sources or sources undergoing a major modification for the pollutant in question. The previous commenter included a mention that the VOC emissions were above the federal PSD significance level of 40 tons per year. This is correct, as a statement of fact. However, federal BACT requirements are only triggered by the significance level if the source is undergoing a major modification. As a new source, the major source threshold of 100 tons per year still applies – even though the source is major for other pollutants.

Summit Vineyard is proposing good combustion practices as primary for state BACT requirements, although some emission reductions will also be obtained from the oxidation catalyst being used for control of CO emissions. The catalyst is not optimized for VOC emissions, and installation of an additional VOC catalyst is technically infeasible due to logistics of placement in the exhaust stream and stack gas temperature and flow characteristics upstream or downstream of the existing oxidation catalyst. The CO oxidation catalyst is required to be installed under BACT.

VOC emissions are primarily the result of incomplete combustion, which increase whenever the CT/HRSG units are operated outside of standard operating practices. They can also increase whenever incomplete combustion occurs as a result of lack of proper maintenance. In both cases, emissions of other pollutants will also increase, which serves as an adequate indicator of combustion practices and regular maintenance.

UDAQ feels that setting a VOC limit, along with some form of periodic testing or compliance verification, would serve only as an additional indicator of proper combustion practices and maintenance requirements. Both are adequately covered by existing conditions of the ITA. Adding additional requirements would simply increase the compliance and regulatory burdens on both the source and the state.

12. Need for alternate BACT/LAER emission limits for periods other than steady state operation has not been adequately justified.

UDAQ response:

There are two parts to this response. The first is the discussion of startup and shutdown emissions. UDAQ's response to comment #7 demonstrates the logic the Division used when setting emission limitations during startup and shutdown. One change in condition #9 only lightly discussed above is the change in averaging periods being used for CO emissions during startup and shutdowns.

The following emission limits, on a per-turbine basis, are proposed as BACT/LAER for startup and shutdown events:

24-hour NO_x limit: 744 lb/24 hours

8-hour CO Limit: 3,182 lb/8 hours

The 24-hour NO_x and the 8-hour CO emission limits along with limits on daily and annual startup and shutdown hours are effective as BACT or LAER. The 24-hour NO_x emission limit serves to protect air quality in the PM10 non-attainment area. The 8-hour CO limit serves to protect the 8-hour CO NAAQS.

These are effective BACT/LAER limits for startups and shutdowns for the following reasons:

- The NO_x emission limit and daily startup limits address local 24-hour PM10 concerns,
- The 8-hour CO emission limit will protect the CO NAAQS,
- Monitoring for compliance will be fairly simple, and
- These limits are based on startup and shutdown emission rates and schedules that were included in the NOI dispersion modeling.

EPA has applied the following ruling for applying startup and shutdown BACT limits from Environmental Administrative Decisions, In Re RockGen Energy Center, PSD Appeal No. 99–1:

"If WDNR [Wisconsin Department of Natural Resources] determines that compliance with the permit cannot be achieved during startup and shutdown despite best efforts, it should specify and carefully circumscribe in the permit the conditions under which RockGen would be permitted to exceed otherwise applicable emissions limits and establish that such conditions are nonetheless in compliance with applicable requirements, including NAAQS and increment provisions. Under such circumstances, a secondary PSD limit may also be considered, provided it is made part of the PSD permit and justified as BACT."

Startup and shutdown emissions were included in the ambient air quality dispersion modeling for LSPP and demonstrated the impacts would be below significant impact levels. Daily NO_x and 8-hour CO emission limits for all operating conditions, and time restrictions for daily and annual startups and shutdowns will be sufficient to ensure that there will be no violations of the NAAQS.

UDAQ agrees with the commenter that the PM10 emission limitation, which is already on a 24-hour averaging period, does not need to be excluded during startup and shutdown events. A change in the final AO will be made to denote this fact.

For transient load conditions, UDAQ disagrees with the commenter that exclusions would only be applicable in cases where a shorter averaging time would be used for compliance with a steady state emission limitation. The source is required to install and operate a continuous emissions monitoring system (CEM) for monitoring of both CO and NO_x emissions on a continuous basis. UDAQ rules do not allow a source to average all CEM emissions over a 3-hour period. Since emissions data can and will be recorded throughout a transient load event, such an exclusion is a legitimate means of ensuring compliance. In fact, there is nothing the source can do during these short-term events in order to reduce emissions further than by using good combustion practices. The catalyst beds serve to reduce emissions extremely well during steady state operation. Rapid increases or decreases in temperature, flow rate, and emission rates cannot be compensated for by a passive control system like a catalyst. While the source can and will adjust their use of ammonia during these periods to minimize emissions, such adjustments can only go so far – especially given the short time period in question.

Instead UDAQ took the approach of limiting the total number and duration of each event, and imposing a hard upper limit on emissions equal to that of the equipment without add-on control devices. The emission limits for NO_x and CO during transient load periods are steady state limits, and would not be appropriate values for startup and shutdown events, as previously discussed.

13. The ITA is unclear on when BACT/LAER emission limits apply for PM_{10}, NO_x, CO and VOC at the combustion turbines.

UDAQ response:

The comment specifically refers to the lack of a definition of "steady state operation." An argument can be made that without this definition in place within the permit, that circular reasoning or logic could be used to show that the source was never out of compliance with the permitted emission limits. The Division agrees with this comment. The final AO will include a definition of steady state operation as "Steady state operation means all periods of combustion turbine operation, except for periods of startup and shutdown as defined below, and periods of transient load conditions as defined in condition 11."

It has always been the Division's intention that steady state (or normal) operation was to be all periods or operation except those specifically excluded within the permit. While the above change would still imply a possibility of circular logic, startup and shutdown events are limited to a total

number of hours per year – preventing the source from continually operating in either a startup or shutdown mode.

14. The concept of LAER is not presented in the proper context in the NSPR.

UDAQ response:

The comment is referring to the lack of comparison with established SIP limits and with the inclusion of control costs in the LAER discussion. The Division agrees with this comment. At present there are no combustion turbine sources included in the Utah SIP that are comparable with the proposed LSPP source. UDAQ is not aware of a similar type or size of source being listed in the SIP for any other state with lower emission values (please see UDAQ's response to comment #10). As discussed in UDAQ's response to comment #10 above, it is a fallacy to compare limits achievable by one type or size of combustion turbine with those of a different type or size. Physical design characteristics, efficiency ratings, and other similar factors can all contribute to a different source having different emission limitations. That being said, the Summit Vineyard source has tighter emission values than the few other combustion turbine sources listed in the Utah SIP.

The Division also agrees that no discussion on control costs should be included in an LAER analysis. This discussion led to the erroneous removal of emission limits on the auxiliary boiler. These limits have been replaced in the final AO (see UDAQ's response to comment #6 above). For discussion of VOC emission limits, please see UDAQ's response to comment #11.

15. The NSPR lacks adequate explanation of how the LAER emission limit for PM_{10} for the combustion turbines was determined.

UDAQ response:

The Division believes that the commenter is in error with regards to the discussion presented with this comment. The commenter appears to believe that the LAER emission limit for PM_{10} for the combustion turbines was calculated or derived simply by taking the average of all CT projects and subtracting the standard deviation. This calculation is simply a coincidence. LAER for PM_{10} for this project, and for every project the Division could find using similar combustion turbines, is simply good combustion practices. The Division is not aware of any add-on control devices or techniques that have been demonstrated for PM_{10} for this type of project.

The Division found it impossible to make an adequate comparison of all the various emission rates and values reported, as it was often difficult to determine if the source was using similar turbines, if both the front and back half PM_{10} values would count towards compliance, and if the source is using heat recovery steam generators with similar add-on controls. Given the fact that there is no add-on control technology proposed for use in this specific situation, it makes sense to impose an emission value that has been demonstrated in practice for this type of turbine. The emission rate listed in the ITA does include both front and back half PM_{10} values.

The commenter goes on to point out differences between this project and the emission values proposed for the Calpine project. Acknowledging that UDAQ was the author of both projects, the level of precision requested in the Calpine project is perhaps excessive. At the time of completion of this response to comments, the AO for the Calpine project has not been issued, and it is the Division's understanding that the AO will not ever be issued. The values listed in that ITA have not been demonstrated in practice for turbines of this type at this altitude. Furthermore, making a comparison with emission values listed in a non-enforceable ITA is not appropriate.

16. For the auxiliary boiler and fuel dew point heater, the NSPR lacks adequate explanation of how the BACT/LAER emission limits were determined, and the limits were omitted from the ITA.

UDAQ response:

The omitted emission values for the auxiliary boiler have already been discussed in UDAQ's response to comments #6 and 11.

The fuel dew point heater is an extremely small emission point, consuming just 4.0 mmBtu/hr at maximum operation. Sources of this type are exempt from the NOI and AO requirements as discussed in R307-413-4(1). The fuel dew point heater is included in the NSPR for informational purposes. It is not UDAQ's intention to include a set of emission limitations on an emission point that is exempted under Utah rule.

The commenter again brings up the Calpine ITA as showing lower emission values. UDAQ's apparent lack of comparison with that document has already been discussed in the response to comment #15.

17. For the standby generator and emergency fire pump, it is unclear from the NSPR and ITA what the BACT/LAER determination is, and what ITA conditions, if any, are intended to serve as BACT/LAER emission limits.

UDAQ response:

The Division agrees that the BACT/LAER discussion in the NSPR is confusing. These two emission units are expected to only be run only for maintenance and testing purposes, or in the event of an actual emergency. They are not intended to operate on a continuous or long-term basis. While it is possible that these two sources will be operated for maintenance or testing purposes while the combustion turbines are also in operation, these emissions were accounted for in the modeling performed by the source.

It has been UDAQ's policy to not impose emission limitations on purely emergency-use-only equipment. UDAQ's rules require that any source with an emission limitation be tested for compliance with that emission limitation. In effect, requiring that the source be operated during the period of the test. Not only does this force the source to produce additional emissions, it requires that additional paperwork, monitoring, recordkeeping and reporting all take place, only increasing the compliance and regulatory burdens on both the source and the state.

18. General dispersion modeling comment – no modeling data were supplied to EPA with the application.

UDAQ response:

While all required documentation was submitted to EPA in a timely manner, it is apparent that the original package was lost or delivered incorrectly. In any event, EPA did not receive some of the submitted documentation. The correct modeling files, including inputs, have been sent to EPA for their review.

19. Inadequate explanation for inputs to modeling

UDAQ response:

The comment specifically refers to the inclusion of only one set of operating conditions when the NOI mentions several different operating scenarios. The number of operating scenarios addressed in the modeling was too numerous to include in the modeling memo. That is why the NOI was cited for reference. The modeling files that were re-submitted to EPA (see response to comment #18 above) contains all the scenarios modeled, and therefore can be used to justify the statement that the 60% load scenario produced the highest impacts for CO and for the other pollutants as well.

20. Inadequate discussion of emission offsets.

UDAQ response:

The comment is similar to comment #9 mentioned above. In addition to the response to that comment, the UACR does not require that a modeling analysis be performed to demonstrate that emission offsets will produce a net air quality benefit. An offset ratio of 1.2:1 is required, since the combined NO_x, SO_2, and PM_{10} exceeds 50 tons per year. The offset ratio of 1.2:1 eliminates 20% more emissions than the new source will emit. This is the reason why UDAQ claims there will be a net air quality benefit. The word 'net' implies that there may be areas with more or less impact than before, but overall, there will be a decrease of emissions and into the airshed. Since secondary particulates have been identified as the major component in PM_{10}, and since these impacts occur over a large area, it is appropriate to conclude there will be a net reduction in PM_{10} due to these offsets.

21. PM_{10} ambient impacts should be evaluated.

UDAQ response:

Modeling was performed, pursuant to UACR307-410-4, which only addresses the requirement to model emissions, based on a table of emission threshold values, for attainment areas. There are no Utah regulations that require modeling in non-attainment areas for those pollutants that are not in attainment. Specifically, the offset program is intended to eliminate the need to model for PM10 in non-attainment areas. See also the UDAQ responses to comments #9 and 20.

22. Startup/shutdown/transient load conditions should be factored into modeling.

UDAQ response:

As part of the emission scenarios modeled, startup/shutdown emissions were evaluated. Maximum emission rates, as indicated in the NOI, included these scenarios. The transient load scenarios (as outlined in condition #11 of the ITA) were not included in the modeling as the maximum impact values were obtained when a combination of startup and shutdown emissions were combined. The emissions estimated to occur during a transient load scenario are smaller than those obtained during either startup or shutdown.

23. Formaldehyde emission rate discrepancy should be corrected.

When preparing the modeling to be included in the NOI, a typographical error was introduced. This error inadvertently doubled the amount of formaldehyde emissions being modeled. When the NSPR was sent for review, the source pointed out this error and requested that the correct formaldehyde emission value of 6.2 tons/yr be included in that document. As the source had already been modeled for double the amount of emissions at the same operating parameters, no further modeling was necessary. The modeling memorandum, which had already been prepared and reviewed, was not changed.

24. Non-existent annual emission limitations are referenced in the ITA.

UDAQ response:

This comment refers to condition #12 of the ITA, which mentions that startup and shutdown emissions are to be included toward applicable annual emission limitations. The commenter believes that no annual emission limitations are included in the ITA, and therefore the statement above is unnecessary and confusing. The Division disagrees with this comment. Condition #14 of the ITA lists the specific annual emission limitation in question. Startup and shutdown emissions are to be included when calculating total annual emissions of PM_{10}, NO_x and SO_2.

25. ITA condition #23 on unavoidable breakdowns should be removed.

UDAQ response:

The condition on unavoidable breakdowns will be removed from the final AO.

26. ITA and/or NSPR should include a finding regarding compliance.

UDAQ response:

The Division agrees with this comment. R307-403-3(3)(b) does require that all other major sources in the state, which are owned or controlled by the owner or operator, Summit Vineyard in this case, are certified to be in compliance. Summit Vineyard does not own or operate any other sources (either major or minor) within the state of Utah. Summit Vineyard is therefore in compliance with R307-403-3(3)(b).